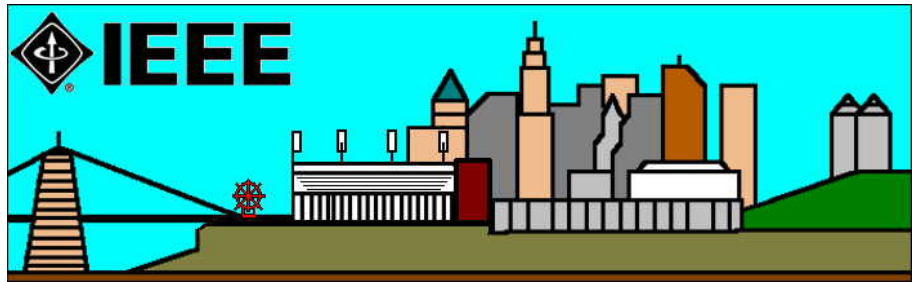


**IEEE CINCINNATI
SECTION
NEWSLETTER
JANUARY 2006**



**JANUARY MEETING
CONTINUING PROFESSIONAL DEVELOPMENT
FOR PE's**

DATE: Thursday, January 26, 2006

PLACE : Raffel's – 10160 Reading Road (see below for directions)

TIME : 5:30 p.m. to 7:00 p.m. - Social Time/Dinner
7:00 p.m. to 8:30 p.m. - Program

COST FOR DINNER: \$10.00 for Student Members
\$15.00 for Members
\$20.00 for Non-Members

NOTE: DINNERS ARE ALWAYS OPTIONAL - YOU MAY ATTEND THE PROGRAM ONLY.

MENU SELECTIONS: Baked Cod with Crab Topping, Hot Sliced Roast Beef in Gravy, Roasted Pork Loin with Dressing, Rice Pilaf, Red Skinned Mashed Potatoes, Vegetables Medley, Tossed Salad, Dinner Rolls and Butter, Assorted, Coffee, Tea Iced Tea, Soft Drinks. There is also a bar available for the purchase of alcoholic drinks. Raffel's is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately 3/4 of a mile to Reading Rd. and turn right on Reading.

The Section Meetings provide a great opportunity to network with fellow engineers in the area!!!

Please call the Cincinnati Section Voice Mailbox at **513-629-9380**, by **Noon, Tuesday, January 24, 2006** if you plan to attend. Please leave your Name, IEEE Member Number, and a daytime telephone number. You can also make a reservation by e-mailing our Arrangements Chair, Charlie Nash, at cnash@ieee.org.

ABOUT THE MEETING: This month's presentation by Mr. John F. Greenhalge of the Ohio State Board of Registration for Professional Engineers and Surveyors will cover Ohio's new Continuing Professional Development (CPD) requirement for professional engineers and surveyors. Also included will be a brief overview of the Board's functions and enforcement activities.

ABOUT THE PRESENTER: John F. Greenhalge is the Assistant Executive Director and Enforcement Officer with the Ohio State Board of Registration for Professional Engineers and Surveyors. The Engineers & Surveyors Board is the state agency that licenses and regulates the professions of engineering and surveying in Ohio. The Board has approximately 35,000 registered professionals, 1,900 registered firms and administrators.

2,500 licensing examinations yearly. John supervises the Board's enforcement program, Continuing Professional Development (CPD) program and fiscal activities. Prior to joining the Board in 1998 John worked for the Franklin County Prosecuting Attorney's office and Sears Roebuck & Co. John has a Bachelor of Science degree in Business Administration and is currently completing a Master of Business Administration degree at Ashland University.

CHAIR'S MESSAGE

by Jim Everly, Section Chair

The Section Executive will meet on Thursday, January 12, 2006. If you have concerns that you feel that the section should address, please feel free to contact me.

This month's meeting will address the requirements for renewal of your PE License. The Cincinnati Section is developing a program including an exam which, when completed, will provide CEU/PDH credit for participants. The seminars are to be available to IEEE members at a minimum cost. In addition our goal will be to provide technical presentation, at no cost to students, unemployed, life members, and for use at section meetings.

Just a reminder, the Cincinnati Section is recruiting members to be upgraded to Senior Member. January 2006 could be your month to elevate your membership. The application process is easy if you have an up-to-date resume. If you are interested in elevating your IEEE membership to Senior Member, be sure to attend January's meeting. After the technical presentation I will hold an informal session on how to prepare a senior member application.

MEMBERSHIP NEWS

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

R. Aravind	Jade Naaman
Charles P. Beetz	Thomas B. Pemberton
Kenneth A. Berman	Aaron P. Prose
Sabrina Ferree	Prasanna R
Dmitry A. Gorodetsky	Matt Rower
Thomas J. Heyer	Steven D. Whitefield
Daniel W. Klimkowski	Ran Zhang
Naveen Koneru	Xuefu Zhou

We wish to welcome these new members to our Section!!!

New Cincinnati Section Senior Member

The Cincinnati Section would like to congratulate our newest Senior Member, **Ralph Brueggemann**, whose upgrade application was recently approved.

If you are interested in upgrading your membership to Senior Member, please contact any member of the Executive Committee.

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Dick Reiman, Historian

Copyright 1994 IEEE. Reprinted with permission from the IEEE publication, "Scanning the Past" which covers a reprint of an article appearing in the Proceedings of the IEEE Vol. 82, No.2, February 1994.

William L. Everitt

Sixty years ago this month, the PROCEEDINGS OF THE RADIO ENGINEERS (IRE) included a paper on Class C vacuum-tube amplifiers by William L. Everitt. At the time Everitt was teaching electrical engineering at Ohio State University. He is generally regarded as among the most outstanding engineering educators of the 20th century and was a recipient of the IRE Medal of Honor in 1954.

In his February 1934 paper, Everitt included a theoretical analysis of a triode Class C amplifier. His analysis indicated that there was a definite value of load impedance, grid bias, and grid excitation which would deliver a maximum output from the amplifier. He outlined a method to determine quickly the optimum operating conditions and provided quantitative design data for large-signal amplifiers.

Everitt was born in 1900 in Baltimore, MD, and graduated in electrical engineering from Cornell University, Ithaca, NY, in 1922. After working for about two years for the North Electric Manufacturing Company on telephone apparatus, he enrolled at the University of Michigan where he received the M.S. degree in 1926. He continued his graduate studies at Ohio State University where he received the Ph.D. degree in 1933, his thesis being on vacuum-tube amplifiers. He taught electrical engineering at Ohio State University from 1926 to 1942 and worked for several summers at the Department of Development and Research of the American Telephone and Telegraph Company (AT&T). He developed the concept of piecewise-linear analysis of large signal amplifiers. He incorporated recent research findings in a form suitable for use in classroom teaching in his book, *Communication Engineering*, published in 1932. The book enjoyed wide usage and was important in introducing the field of telecommunication to a generation of electrical engineering students.

During World War II, Everitt served as Director of Operations Research in the office of the Chief Signal Officer of the Army Signal Corps. He contributed a paper to the September 1944 issue of the PROCEEDINGS in which he discussed needed reforms in engineering education. He suggested that the disruption of education due to the war presented an opportunity for change and that there might not be another such opportunity in the foreseeable future. He stated that engineering students had been taught analysis but that they also needed to learn synthesis. He thought that the case method commonly used in legal training might also be applied to engineering education. He stressed the need to teach ethics and "what engineering is, its philosophy, and what it can do." He also recommended that a course on the "philosophy and methods of engineering" ought to be included in the cultural education of nonengineers. Everitt served as IRE President during 1945 and also was active in the American Society of Engineering Education as an advocate of reform, including greater emphasis on science and mathematics.

After the war, Everitt headed the Electrical Engineering Department at the University of Illinois from 1945 to 1949 and then was Dean of Engineering at Illinois from 1949 to 1969. He played a key role in the creation of the Professional Groups system of the IRE, a system which continues to flourish in the IEEE. He received the Mervin J. Kelly Award of the IEEE in 1963 and became a founding member of the National Academy of Engineering. He served as general editor of a long series of electrical engineering textbooks published by Prentice-Hall. His hobbies included photography and woodworking. He died in September 1986.

*James E. Brittain
School of History, Technology, and Society
Georgia Institute of Technology*

IEEE NEWS

Wall Street Journal Rebutts Engineer Shortage Claims, IEEE-USA Committee Chair Quoted

WASHINGTON (16 November 2005) -- The Wall Street Journal rebuts claims of a shortage of U.S. engineers by saying that difficulty filling positions is often caused by employers being too choosy in the hiring process.

In "Behind Shortage of Engineers: Employers Grow More Choosy," author Sharon Begley writes that "... companies often create the very shortages they decry by insisting on applicants who meet every item on a detailed list of qualifications."

Michael Teitelbaum, a demographer with New York's Alfred P. Sloan Foundation, said, "No one I know who has looked at the data with an open mind has been able to find any sign of a current shortage."

Paul Kostek, chair of the IEEE-USA Career & Workforce Policy Committee said, "Every few years there is a spurt of panic that we won't have enough engineers in five years. And I say to myself, gee, I'll still be here."

IEEE-USA staff contributed information to Ms. Begley, directed her to Teitelbaum and arranged the Kostek interview.

Wall Street Journal subscribers can access the article at http://online.wsj.com/article_print/SB113210508287498432.html. Others can go to <http://www.post-gazette.com/pg/05320/607304.stm>.

IEEE-USA Applauds Rep. Pascrell for Introducing H-1B Reform Legislation

WASHINGTON (21 November 2005) -- IEEE-USA applauds Rep. Bill Pascrell (D-N.J.) for introducing legislation that attempts to correct some of the "serious problems" in the H-1B temporary visa program.

Rep. Pascrell's bill, H.R. 43278, the "Defend the American Dream Act of 2005," introduced on 17 November, is designed to provide greater workforce protections for U.S. citizens and H-1B visa holders. It would require all employers, not just so-called "H-1B-dependent companies," to attest to good-faith efforts to actively recruit U.S. workers for jobs employers propose to fill with H-1B workers. And it prohibits the outplacement (i.e., outsourcing, leasing or contracting) of H-1B workers by H-1B employers to other companies.

"In report after report, government investigators have found serious weaknesses and failings in the H-1B program," IEEE-USA President Gerard A. Alphonse said. "Contrary to the law's intent, the program can be used to fill any job at almost any wage, and the vast majority of employers are not required to recruit American workers first. IEEE-USA applauds Rep. Pascrell for drafting a bill that addresses these serious problems."

In evaluating the H-1B program for the FY 2006 budget cycle, the federal Office of Management and Budget found, "The [current H-1B] statute waives a labor market test, does not require submission of supporting documentation by employers, [and] limits the Department of Labor's authority to review or question [applications]... [leaving] the program vulnerable to fraud or abuse." According to IEEE-USA, Rep. Pascrell's bill will fix these flaws and ensure that the statute aligns with the intent of the program.

The bill also seeks to strengthen prevailing wage protections for foreign workers because, as viewed by IEEE-USA, the current protections are ineffective and can be easily taken advantage of by employers seeking to pay lower wages than they would pay to comparably skilled Americans. Rep. Pascrell highlighted the bill at a news conference held in Paterson, N.J.

**IEEE-USA President Voices Support for Permanent
Immigration of High-Tech Workers in Published Column**

WASHINGTON (22 November 2005) -- In "Seeing the Light on H-1B Visas," IEEE-USA President Gerard A. Alphonse writes that to ensure the United States' continuing technological leadership, "IEEE-USA has long favored the permanent immigration of skilled foreign-born engineers and scientists as a much better solution than using temporary H-1B visas."

Writing in the 21 November issue of Computerworld magazine, Alphonse characterizes the H-1B program as "plagued by myth and abuse," and cites examples of how flaws in the program hurt U.S. workers and H-1B visa holders. He encourages Congress not to add more H-1B visas to a "flawed system."

You can read the column at <http://www.computerworld.com/governmenttopics/government/legislation/story/0,10801,106343,00.html>.

**IEEE-USA APPROVES '06 ENGINEERING PUBLIC-AWARENESS PROGRAM;
TO ENHANCE ENGINEERS' IMAGE**

WASHINGTON (30 November 2005) -- As part of its ongoing effort to promote the image of engineers in the United States, IEEE-USA volunteer leaders have endorsed a 2006 public-awareness program that reaches out to youngsters, adults and the public-at-large through targeted media and events. At meetings on 29 October and 11 November in Baltimore and Orlando, the IEEE-USA Operating Committee and IEEE-USA Board, respectively, approved \$73,000 in expenditures, plus related support for the 2006 program, which includes six components:

- Adding IEEE technologies to television engineering news spots developed through the American Institute of Physics' (AIP) "Discoveries & Breakthroughs" U.S. TV sales- syndication program
- Helping journalists in print and broadcast fields communicate authoritatively to the public about engineering and science through the placement of two IEEE-USA Media Fellows, as part of an overall AAAS program
- Backing engineering capacity building in and outside of the United States by recognizing U.S. students in the Colorado-based humanitarian organization, Engineers Without Borders-USA(EWB-USA)
- Introducing youngsters to basic engineering concepts and communicating engineers' support for local community activities through the National Engineers Week 2006 Discover Engineering Family Day
- Pursuing a second United Nations EWeek Girl Day in New York City for advancing technology skills of young females worldwide and communicating an inclusive image of engineering in the United States
- Informing younger students, nine to 13 years-old, about future careers in engineering through a brochure distributed to a cross-section of children's museums nationwide

TV ENGINEERING NEWS SPOTS: For a second consecutive year, the IEEE-USA Board backed AIP's "Discoveries & Breakthroughs" TV news spots, raising IEEE-USA's contribution to \$25,000. In 2005, the organization participated in developing more than 140 news stories about engineering and science, distributed to 108 U.S. TV stations with a potential audience of 80-million viewers. Placements included coverage of such IEEE technologies as a robotic arm for stroke victims, high-tech captions, a mouse adapter for individuals with hand tremors, and an oxyride battery. IEEE-USA is also collaborating with AIP on adapting the TV news spots for use in the classroom by pre-university students and teachers. For more information, go to <http://www.ivanhoe.com/science>.

MEDIA FELLOWS: Beginning in 2006, for the seventh consecutive year, IEEE-USA is continuing its support of the AAAS Science and Engineering Mass Media Fellows Program -- for the first time choosing two IEEE-USA Fellows -- with a \$17,000 contribution. Since 2000, IEEE-USA has backed six U.S. IEEE student members who have worked for 10 weeks at these media outlets: "Scientific American"; WNBC-TV, in New York City; "Popular Science"; WOSU-AM, in Columbus, Ohio; the "St. Louis Post-Dispatch"; and the "Richmond Times-Dispatch." In 2005, two-dozen AAAS Mass Media Fellows produced some 250 news stories about science and technology. For more information, go to <http://www.ieeeusa.org/communications/massmedia.asp>.

JOURNALISM AWARD: In a related activity, IEEE-USA presents an annual award to journalists for distinguished literary contributions furthering the public understanding of the profession. Since 1988, past literary award recipients have included NPR's Richard Harris, "The Wall Street Journal's" G. Pascal Zachary, and Author Jon Katz.

EWB-USA STUDENT RECOGNITIONS: For the first time in 2006, IEEE-USA is sponsoring five \$1,000 recognition awards for students who participate in volunteer capacity building projects for the Colorado-based humanitarian organization, Engineers Without Borders (EWB)-USA. The awards, given in such areas as appropriate technology and sustainable legacy, will be presented at the EWB-USA international conference at Rice University in Houston from 16-18 February 2006. For more information, go to <http://www.ewb-usa.com/modules/content/index.php?id=77>.

EWeek '06 FAMILY DAY: For the third consecutive year, IEEE-USA is cosponsoring the EWeek 2006 Discover Engineering Family Day, to be held on Saturday, 18 February, at the National Building Museum in Washington, D.C. A \$15,000 contribution to the interactive, hands-on event will help youngsters grasp fundamental engineering principles. With 7,000 attendees, the 2005 Family Day event produced the second-largest turnout in the history of the National Building Museum -- exceeded only by the 2004 Family Day. During EWeek in 1993, IEEE-USA helped launch the first Family Night at Intelsat in Washington, the model for the current Family Day event. For more information, go to <http://eweekdcfamilyday.org/>.

EWeek '06 UN 'GIRL DAY': IEEE-USA public-relations staff is pursuing a second EWeek United Nations "Girl Day" in 2006 that addresses advancing girls' science, technology, engineering and mathematics skills worldwide, as well as increasing information networks among youth through technology. For information on the first IEEE-USA-spearheaded UN "Girl Day," go to http://www.eweek.org/site/News/Eweek/2004_UNPhotos.shtml.

CAREERS BROCHURE: And, finally, IEEE-USA will be producing a pre-university education brochure designed primarily for youngsters in fourth to eighth grades, and distributed to a cross-section of children's museum nationwide. The brochure will complement another version aimed at high-school students.

NEWS FROM IEEE EDUCATIONAL ACTIVITIES AND THE HISTORY CENTER (1st Quarter 2006)

STANDARDS EDUCATIONAL MATERIALS NOW AVAILABLE

The IEEE Standards in Education Web Portal has been developed in response to a need for more standards education in US undergraduate Electrical and Computer Engineering as well as Engineering Technology programs. It was created by the IEEE Standards in Education Task Force (SETF) with funding and cooperation received from the IEEE Foundation, the National Science Foundation, the IEEE Educational Activities Board, and the IEEE Standards Association. The materials developed are available within the web portal support open access training on the history, use, and applications of standards. Tutorials, case illustrations, a news and features section, and a glossary and reference guide are currently available. Additional tutorials and case

illustrations are currently in development. Although these materials have been developed with the undergraduate student in mind, they are also helpful to anyone who is interested in learning more about standards. For more information about this effort or to access these materials, please visit www.ieee.org/standardseducation or contact Tara Gallus, t.gallus@ieee.org.

IEEE VIRTUAL MUSEUM

Look for a new exhibit on nanotechnology on IEEE's award-winning pre-university educational site (<http://www.ieee.org/museum>).

High school students will be able to interact with current engineering students, learn why students entered engineering as well as what it's like to study engineering in college, and experience engineering through a short series of classroom workshops. Parents will be able to ask questions of admissions personnel from local universities during a panel discussion and interact with the university representatives in an Exhibit Area. Engineering students from local universities will demonstrate mobile and flying robots, model rockets, and engineering design projects in the Exhibit Area.

For more details or to register for the event visit www.ieee.org/education/precollege/soyouwanttobeanengineer.html.

PARTNERSHIP AGREEMENT SIGNED WITH THOMSON

A Courseware Development and Distribution Agreement has been signed between IEEE and Thomson. The finalization of the agreement enables Thomson and IEEE to undertake an official product launch scheduled to take place in November, 2005. The length of the Agreement is for one year beginning on the effective date of September 30, 2005. A preliminary or soft launch began in July, 2005. During the soft launch, the Director of Continuing Education and staff from Educational Activities (EA) worked with Thomson to highlight the features and benefits and develop the selling process for Expert Now IEEE to Thomson regional sales teams. At this time feedback from the sales force of 155 Thomson sales account managers and learning consultants has been positive and our new product is seen as a potential solution for many of Thomson's existing clients. A significant number of the Thomson sales team has started to educate their client base about Expert Now IEEE.

For more information on Expert Now, please go to [www.ieee.org/education/Expert Now IEEE](http://www.ieee.org/education/Expert_Now_IEEE) or contact Marilyn Catis at (732) 562-5323 or mg.catis@ieee.org or Tara Gallus at (732) 562-5499 or t.gallus@ieee.org.

MILESTONES

Sections are urged to get involved in local history, particularly through the Milestones Program which is designed to help Sections promote the importance of the engineer and engineering in their local communities (see http://www.ieee.org/organizations/history_center/milestones_program.html).

This year continues to be a record-breaking one for the program. Three nominations were approved by the IEEE ExCom at their October and November meetings: LCD Display (Princeton-Central Jersey Section, Region 1); WEIZAC Digital Computer (Israel Section, Region 8); and Alexander Bell's Voice over Wire (Boston Section, Region 1).

SUMMARY RESULTS OF 2003 ALL SOCIETY RESEARCH AVAILABLE

In order to gain a better understanding of how to go about developing new educational products and services that would appeal to IEEE Societies and Councils, a summary report which highlights the results found in the 2003 All-Society Research Project specific to Societies' responses on continuing education has been developed. The findings have been shared with members of the Society Outreach Committee. Interested in a copy? Contact Marilyn Catis at mg.catis@ieee.org.

If you have ideas for new continuing professional development products or services, contact Tamer Basar, SOOC Chair, at t.basar@ieee.org or Marilyn Catis at mg.catis@ieee.org.

CALL FOR 2006 EAB AWARD NOMINATIONS

The IEEE Educational Activities Board is accepting nominations of IEEE members for its annual awards. The deadline for nominations is 30 April 2006. Awards include: IEEE EAB Section Professional Development Award, IEEE EAB Meritorious Achievement Award in Accreditation Activities, IEEE EAB Meritorious Achievement Award in Continuing Education, IEEE EAB Major Educational Innovation Award, IEEE EAB Pre-University Educator Award, IEEE EAB Meritorious Service Citation, and the IEEE EAB Employer Professional Development Award.

For award descriptions, honorarium details, and nominations packets, visit

http://www.ieee.org/portal/cms_docs/education/EABAwards/index.htm. For more information IEEE EAB Awards contact eab-awards@ieee.org.

IEEE HONORS PHOENIX HIGH SCHOOL TEACHERS ALLAN CAMERON AND FARIDODIN LAJVARDI FOR PROMOTING ENGINEERING CAREERS THROUGH HANDS-ON MENTORING PROGRAM

7 December 2005, PISCATAWAY, NJ - - Carl Hayden High School teachers Allan Cameron and Faridodin Lajvardi have received the IEEE Educational Activities Board (EAB) Pre-University Educator Award for their influence in fostering students' interest in engineering majors and careers. The two teachers were recognized for their hands-on mentoring program and instituting several technology-focused school organizations resulting in an increased number of Carl Hayden students receiving engineering scholarships and selecting the field as a major. With more than 365,000 members in over 150 countries, the IEEE is the world's largest professional society dedicated to the advancement of technology.

Cameron and Lajvardi joined forces in a common vision to motivate their students at Carl Hayden High School, Phoenix, AZ, to actively participate in engineering projects. A key part of their success is inviting engineers, scientists and inventors to work with students on their engineering projects not as lecturers, but as team members. As students interact with educated professionals, gaining information, insight and mentorship, they develop role models that further inspire them to pursue careers in engineering and technology.

Cameron and Lajvardi have been credited with: creating Carl Hayden High School's Amateur Radio Club which is nationally renowned as a "Special Service Club"; creating the first and longest running national high school full sized electric car program; creating a FIRST (For Inspiration and Recognition of Science and Technology) team: Falcon Robotics 842, and winning the FIRST Engineering Inspiration Award earlier this year. The team also won a first place award in a Marine Advanced Technology Education Center competition with its underwater, remotely operated vehicle. The high school team was chosen among a series of entrants from high schools and universities, finishing ahead of MIT.

"Students in our society do not hear about the positive, rewarding, important work engineers do. We want to change our culture. We want kids to know not only about sports personalities, but also about the people who have made a big contribution to our lives," said Cameron during the IEEE awards ceremony which took place in Orlando, Fla. earlier this month.

IEEE HONORS SAN DIEGO MIDDLE SCHOOL TEACHER PHILLIP G. HUSZAR FOR FOSTERING STUDENT INTEREST IN MATHEMATICS, SCIENCE AND ENGINEERING

7 December 2005, PISCATAWAY, NJ - - The IEEE presented Phillip G. Huszar, a Standley Middle School, San Diego, Calif. teacher, with the Educational Activities Board (EAB) Pre-University Educator Award for his teaching methodology which helps his students retain their math skills. Dedicated to cultivating in his students a deep understanding and affinity for the field of mathematics, Huszar received the award earlier this month

during an awards ceremony held in Orlando, Fla. With more than 365,000 members in over 150 countries, the IEEE is the world's largest professional society dedicated to the advancement of technology.

Laying a foundation for true scientists and resourceful engineers who have learned to think for themselves, Huszar has effectively enabled his students to build upon a technical foundation and inspired them to pursue science, engineering and other mathematics-related fields. Huszar has been teaching algebra and geometry to sixth through eighth grade students in the Standley Middle School since 1998. He has also served as co-chair of the Standley Mathematics Department since 1999, and authored the school's mathematics and algebra curriculum. Currently, under a grant funded by the Intel Corporation, Huszar is collaborating with other selected teachers to guide the future teaching and learning paradigms of the San Diego Unified School District.

Upon accepting the award, Huszar mentioned that a parent of a former student had submitted the nomination form and stated, "Knowing that I have had such a positive impact, knowing that I might have influenced a student in such a positive way, is the most wonderful gift that an educator can receive."

*IEEE HONORS HOLMDEL HIGH SCHOOL TEACHER PHILIP KELLER FOR PROMOTING
ENGINEERING THROUGH CLASSROOM EXPERIMENTS AND PROJECTS*

PISCATAWAY, NJ - - The IEEE presented Philip Keller with the Educational Activities Board (EAB) Pre-University Educator Award for his role in inspiring a generation of students to excel in science, mathematics and engineering through classroom interactions that bring both student and teacher to new heights in understanding. With more than 365,000 members in over 150 countries, the IEEE is the world's largest professional society dedicated to the advancement of technology.

Keller, who teaches physics and mathematics at Holmdel High School, Holmdel, New Jersey, provides students with the opportunity to write their own original simulations, which he shares with his classes. He designs experiments and projects for his students that challenge their understanding of concepts, and tap their "inner scientist and engineer" as they discover and build upon solutions.

Inspiring students to excel by setting high goals for them, Keller also guides them through challenges which demonstrate that they can succeed as scientists. His effect on students goes far beyond the top honors they win in science competitions. Motivated by his support and enthusiasm, a number of his students work on physics projects throughout the summer. An innovative educator, Keller instills in his students a desire to learn and sets them on a path towards excellence. Many of his students have gone on to study engineering, physics, mathematics and medicine at Harvard, MIT, Stanford, Princeton, University of California, Berkeley, and the University of Michigan, with many continuing with graduate and research work in these areas.

"I have been teaching physics for 18 years. So, to receive this award while not having quite reached the half-way mark in my career is not only an honor, but also a challenge to me to continue to do good work. I hope to meet the challenge," said Keller during the awards ceremony held earlier this month in Orlando, Fla.

Keller has also developed many simulations for the educational software program Interactive Physics, and has authored Keller's Math SAT Game Plan, which is currently being used by high school students throughout the United States.

**IPv6 Transition Should be Part of National
Innovation Debate, Says IEEE-USA President**

WASHINGTON (9 December 2005) -- In a keynote address delivered this morning to the U.S. IPv6 Summit in Reston, Va., IEEE-USA President Gerard A. Alphonse urged participants to raise widespread adoption of the Internet Protocol version 6 (IPv6) by Japan, China, Korea and other Asian countries as an issue in the current national policy discussion on U.S. competitiveness and innovation policy.

"Despite its importance, breadth, and all the potential services it will enable worldwide, the current high-level debate has not identified IPv6 as an innovation opportunity of national significance," Dr. Alphonse said. He added: "That's unfortunate because we know that Asian, European and other nations are working very diligently on IPv6, or are even seeking dominance in setting its standards." While praising a recent government directive requiring federal agencies to adopt IPv6 implementation plans, the IEEE-USA president cautioned: "We shouldn't kid ourselves that the Office of Management and Budget's directive is the same as a national vision, mission and action plan for the United States, and equivalent to the plans already in place in Japan, China and Korea."

See the text of Alphonse's remarks at:

<http://www.ieeeusa.org/communications/presidentscolumn/Alphonse/alphonsedec05.html>

The U.S. IPv6 Summit brought together senior military, government and political leaders, academics, and business executives in information technology and research and development who share a common interest in IPv6 implementation. The 2006 summit focused on IPv6 transition and how the "New Internet" will help create innovative new businesses and jobs. For more information, see <http://www.usipv6.com/>.

In October, IPv6 Summit Chair Alex Lightman told "IEEE-USA Today's Engineer" that the "New Internet has the potential to create 10-million new American jobs and trillions of dollars in revenue for the United States, but leadership is slipping away to other countries, and it will soon be difficult, if not impossible to recover."

Read the "Today's Engineer" article at <http://www.todaysengineer.org/2005/Oct/ipv6.asp>.

AchieveGlobal Joins IEEE-USA to Offer Online Courses in Leadership, Customer Service Skills

WASHINGTON (14 December 2005) -- IEEE-USA, in concert with AchieveGlobal, is offering online career development courses designed to equip IEEE members with leadership and customer service skills.

"In today's professional landscape, superior leadership and customer service skills are critical to achieving desired business results," AchieveGlobal CEO Sharon Daniels said. "We're pleased to join IEEE-USA in providing this opportunity to IEEE members."

AchieveGlobal, an international provider of training and consulting services, offers course modules in "Giving and Receiving Constructive Feedback," "Managing Your Priorities," "Proactive Listening" and many others. The courses are approved for continuing education credit and based upon AchieveGlobal's years of experience as a leader in the professional training industry.

In a unique arrangement, IEEE members can access these courses as individuals, without having to work for a company under contract with AchieveGlobal, and for less than the retail price. A specialized learning management system allows members to track their progress and course portfolio.

"We recognize that today's engineers need more than just technical know-how; they also need interpersonal skills to succeed," said Jean Eason, IEEE-USA's vice president for career activities "Non-technical skills are increasingly desired by companies employing engineers."

For more information and course registration, go to <http://salary.ieee.org>, log in using your IEEE Web Account, click on the Shop tab, and then click on "Career-Development Courses."

Based in Tampa, Fla., AchieveGlobal (www.achievegloab.com) provides research-based learning solutions that aid clients in developing leaders and acquiring, growing and retaining profitable customer relationships.

IEEE-USA Commends Sens. Ensign, Lieberman for Introducing “National Innovation Act of 2005”

WASHINGTON (15 December 2005) -- IEEE-USA commends Sens. John Ensign (R-Nev.) and Joseph Lieberman (D-Conn.) for introducing the “National Innovation Act of 2005” today on Capitol Hill. The legislation includes provisions that will strengthen U.S. competitiveness in the 21st Century.

The “National Innovation Act” responds to recommendations in the National Innovation Initiative Report “Innovate America,” published by the Council on Competitiveness in 2004. The Act focuses on three primary areas: increasing investment in basic research; improving science and technology talent; and developing a robust innovation infrastructure.

The legislation would, among other things, establish a President’s Council on Innovation; make permanent the Research and Experimentation Tax Credit; nearly double research funding for the National Science Foundation by FY 2011; authorize funding for new and existing Professional Science Master’s Degree Programs; and encourage the development of regional clusters of technology innovation.

For a summary of the legislation, go to <http://lieberman.senate.gov/documents/bills/051215niasummary.doc>.

21st Century Electric Transmission Infrastructure Analyzed in IEEE-USA eBook

WASHINGTON (15 December 2005) -- The "vital American energy infrastructure" will "deteriorate before our eyes" unless economists, engineers and policy specialists resolve "a raging battle" among market pressures, technical necessities and policy priorities, according to Patrick E. Meyer, author of a new IEEE-USA eBook. Titled "The Reliability of the Electric Transmission Infrastructure in the 21st Century, An Analysis of 'The Energy Policy Act of 2005,'" the eBook provides a detailed discussion of the key provisions of the first comprehensive U.S. energy bill signed into law since 1992.

The 60-page document analyzes the legislation as it addresses tax benefits for traditional and alternative fuel sources, offshore drilling and Alaska development, nuclear energy, Daylight Savings, alternative fuels, energy efficiency, and electricity market reform. The eBook also provides a detailed summary of Title XII of the legislation, which covers the American electricity sector. In multiple tables, the publication summarizes important electricity sector-related action dates.

In addition, the eBook provides background on which U.S. congressional body supported each of the contending issues in the Electricity Title XII, including sections covering electric reliability standards, siting of interstate electric transmission facilities, third-party finance, advanced transmission technologies, funding new interconnection and transmission upgrades, market transparency rules, sanctity of contract and electric utility mergers.

Finally, the publication identifies IEEE-USA priority issues on current and future energy policy affecting advanced transmission technologies, development of advanced nuclear power, hybrid-electric vehicles and electric transportation, and renewable energy technologies. According to Meyer, the eBook author, further input from professional societies, including the IEEE, and others, will be crucial as the legislation is implemented.

Still pending are final rules on Electric Reliability Organization implementation and reliability standards, an inventory report on renewable energy resources, a study on the future location of national interest electric transmission corridors, and a report on demand-response resources and advanced electricity metering.

Patrick Meyer is a graduate student in public policy at the Rochester Institute of Technology and was an energy intern at IEEE-USA in Washington during the summer of 2005.

To order the new eBook: IEEE members pay a special discounted price of \$4.95; non-members pay \$19.95.

To order, go to https://salaryapp.ieeeusa.org/rt/salary_database/shop. Then, scroll down to product number UH3510.

IEEE's "The Institute" On-Line

The updated issue of IEEE's "The Institute" is always available on-line at <http://www.ieee.org/theinstitute>. Check out some of these items which are featured:

- Virtual Conference Gets Careers in Gear: How does the quality of online degree programs stack up against traditional degree programs? Does an engineer really need an MBA? Is it important to your career to belong to a professional association? A panel of experts tackled these and other topics at a Web seminar called the Career Accelerator Forum, hosted by IEEE Spectrum magazine. Read more at <http://boldfish.ieee.org:80/u/1158/04824637>
- Now Playing on IEEE Spectrum Radio: Iraq Reconstruction: Just back from Iraq, Glenn Zorpette, IEEE Spectrum's executive editor, interviews Army National Guard Col. Frank Gonzales about efforts to reconstruct Iraq's electric power grid. Listen now at <http://boldfish.ieee.org:80/u/1159/04824637> Check out what's new every day on IEEE Spectrum Online at <http://boldfish.ieee.org:80/u/1160/04824637>
- IEEE Member Applies Brain Power to Power Control: An electric power grid generally consists of generators, substations, and lots and lots of transmission lines. It is an intelligently designed system, to be sure, but is not intelligent by itself. At least until recently, a power grid could not, for example, learn from its mistakes and avoid repeating them; nor could it repair itself after a failure. Not until, that is, IEEE Senior Member Ganesh Kumar Venayagamoorthy started applying theories of computational intelligence to the field. Find out more at <http://boldfish.ieee.org:80/u/1161/04824637>
- Mumbai Student Branch Wins Web Site Competition: A multifunctional Web site designed by an IEEE student branch in India took first prize in the IEEE Student Branch Web Site Contest. The site, built by Vivekananda Education Society's Institute of Technology, Chembur, in Mumbai, known as IEEE VESIT, allows visitors with visual problems to get around. The site's designers included a wireless application, so that those with mobile phones can access the site, and the information on the site is translated into eight languages. Find out more at <http://boldfish.ieee.org:80/u/1163/04824637>
- Giving Back to the IEEE: If the IEEE has had a positive impact on your professional life, consider making a donation to the IEEE Foundation. The foundation has more than 80 charitable funds that support a variety of educational, historical-preservation, and peer-recognition programs. Pick the one that best fits your personal interests, and make a gift. Find out more at <http://boldfish.ieee.org:80/u/1165/04824637>
- Conference Focuses on Nanoelectronics: Make things small enough, and their properties -- physical, optical, chemical, electrical, and thermal -- change. Not only that, says Tan Cher Ming, general cochair of next January's IEEE NanoSingapore 2006 conference, but when you get down below 100 nanometers, "a lot of those properties become tunable: mechanical strength, melting point, electronic structure, chemical reactivity." NanoSingapore will concentrate on nanoelectronics, the first conference on this subject to be held by the IEEE in the country. Read more at <http://boldfish.ieee.org:80/u/1167/04824637>

- **Proceedings From Computer Graphics Conference Now Available:** The proceedings of the 2005 Computer Graphics International conference, which covered a diverse range of the latest innovations in computer graphics design and technology, is now available. The conference, which took place in June, featured papers in all areas of computer graphics, including geometric computing, image-based techniques, and human-computer interface. To purchase the complete proceedings of the conference, visit <http://boldfish.ieee.org:80/u/1168/04824637>
- **Medical Records: From Clipboard to Point-and-Click:** The IEEE has joined forces with eight other medical and engineering societies to form an umbrella consortium, the Biotechnology Council. The council's primary goal is to standardize everything from medical terminology to networking protocols so that medical records can be stored electronically and sent instantly anywhere in the world -- all with absolute privacy, security, and understandability. Read more at <http://boldfish.ieee.org:80/u/1259/04824637>
- **Organize Tours to Technical Facilities:** Engineers like to know how things work. The IEEE's local organizations can help feed that curiosity by arranging tours of nearby technical facilities, such as manufacturing and electric-power plants, satellite ground stations, and telecommunications facilities. Learn more at <http://boldfish.ieee.org:80/u/1260/04824637>
- **Voices of Innovation: The IEEE's Oral History Collection:** Transcripts of more than 400 interviews with engineering pioneers such as the Institute of Radio Engineers' cofounder Alfred Goldsmith provide rare insight into the development of many key present-day technologies. Find out more at <http://boldfish.ieee.org:80/u/1261/04824637>
- **IEEE Spectrum Goes Hollywood:** This month, IEEE Spectrum Online unveils a bimonthly, Web-only column by author David Kushner covering behind-the-scenes science and engineering in Hollywood. Don't miss the first installment, "The Science of Pseudoscience" -- on how studios try to accommodate an increasingly tech-savvy public by reaching out to entertainment-savvy technologists, at <http://boldfish.ieee.org:80/u/1263/04824637> Interact daily in polls, blogs, and webcasts, and listen to IEEE Spectrum radio at <http://boldfish.ieee.org:80/u/1264/04824637>
- **Marketplace of Ideas: Man in Space:** NASA Administrator Michael Griffin, an IEEE member, told the editorial board of USA Today in September that the space shuttle and the International Space Station were mistakes. The two projects, he said, are too expensive in terms of astronaut lives and dollars and haven't produced enough scientific knowledge. What do you think? Weigh in at institute@ieee.org
- **IEEE Xplore Adds New Features:** Searching for an IEEE book? Want to buy an IEEE standard? You can now do these things through IEEE Xplore, thanks to features added in the digital library's latest upgrade. IEEE Xplore contains more than 1.2 million documents from IEEE journals, magazines, transactions, conference proceedings, and standards, as well as journals and conference proceedings from the Institution of Electrical Engineers in the United Kingdom. Learn more at <http://boldfish.ieee.org:80/u/1265/04824637>
- **Milestone Recognizes Early High-Voltage System:** In the 1960s, engineers at the electric power utility Hydro-Quebec, who were building one of the biggest hydroelectric generating complexes in North America, had a big problem: how to send all that electricity generated in the north on tributaries of the St. Lawrence River to the growing cities in the southern end of Quebec province. The solution was the world's first 735-kilovolt transmission system, now designated an IEEE Milestone in Electrical and Computing Engineering. Learn more at <http://boldfish.ieee.org:80/u/1268/04824637>

IEEE Student Members Encouraged to Apply for IEEE-USA/AAAS Mass Media Fellowships

WASHINGTON (21 December 2005) -- IEEE-USA is seeking two U.S. IEEE student members to work as reporters, researchers and production assistants in newsrooms across the country during a 10-week mass media fellowship in the summer of 2006.

Administered by the American Association for the Advancement of Science (AAAS), Fellows must have the ability to explain complex scientific and engineering principles in a way the general public can understand. This program helps strengthen connections between engineers and journalists, and increases public understanding and awareness of science, engineering and technology.

To apply, individuals must be at least a senior in college majoring in mathematics or the natural, physical, health, engineering, computer or social sciences. Fellows receive a weekly stipend of \$450. Applications are due by 15 January 2006. Go to <http://www.aaas.org/programs/education/MassMedia/> for more information; or contact Stacey Pasco at spasco@aaas.org, or (202) 326-6441.

Abby Vogel, a graduate student at the University of Maryland, served as IEEE-USA's 2005 fellow. She worked for the Richmond (Va.) Times-Dispatch and wrote many articles that appeared on the newspaper's front page. For more on IEEE-USA's participation in this program, go to <http://www.ieeeusa.org/communications/massmedia.asp>.

IEEE Foundation Announces 2006 Application Deadlines

The IEEE Foundation, the philanthropic arm of the IEEE, will accept unsolicited applications for new and innovative projects that seek to improve the worldwide technological literacy of society from childhood through adulthood in three cycles in 2006. Projects should:

- IMPROVE primary and secondary math and science learning,
- PREPARE pre-university students to consider engineering as a career path
- INCREASE active interest in engineering and science,
- PRESERVE the history of IEEE associated technologies,
- TAP the technological expertise of IEEE members,

Application deadlines:

Applications Due	IEEE Foundation Meeting Date
January 7, 2006	March 2006
April 15, 2006	June 2006
September 16, 2006	November 2006

To learn more about the IEEE Foundation's grant guidelines, and to submit an online application, visit <http://www.ieeefoundation.org>.

Three U.S. IEEE Members to Begin IEEE-USA Government Fellowships

WASHINGTON (22 December 2005) -- Three U.S. IEEE members will begin their IEEE-USA Government Fellowships in January. Each will advise government leaders on key technology policy issues and play an important role in preserving national security, and promoting innovation and economic prosperity.

Stephen Bonk of Riva, Md., will advise Rep. Dana Rohrabacher (R-Calif.). The congressman is a member of the House International Relations and Science committees, and the Congressional Research and Development Caucus, of which IEEE-USA is an advisory committee member. Bonk will work closely with the Science Committee's Space and Aviation Subcommittee, and in policy areas germane to the IEEE-USA Committee on Transportation and Aerospace Policy. He is a technical planning manager with the Washington-based Science Applications International Corp.

Steve Czuchlewski of Los Alamos, N.M., has been assigned to the State Department's Policy and Regional Affairs Office. He will assist in European and Russian policy, offer advice on technical issues, and is expected to interact with Department of Energy staff. He recently retired after 30 years as a technical staff member at Los Alamos National Laboratory.

Scott Jordan of Irvine, Calif., will advise Sen. Ben Nelson (D-Neb.) and be the lead staff person on Internet and telecom issues. Sen. Nelson is a member of the following Senate committees: Agriculture, Nutrition and Forestry; Armed Services; Commerce; Science and Transportation; and Rules and Administration. Jordan is a professor in the University of California, Irvine Department of Electrical Engineering and Computer Science.

For more information on IEEE-USA's Government Fellowship program, visit <http://www.ieeeusa.org/policy/govfel/default.asp>; or contact Erica Wissolik, IEEE-USA program manager, government activities, at e.wissolik@ieee.org.

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